



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,077	11/21/2001	Hsien-Chung Woo	JNP-0147	1510

44987 7590 11/16/2006

HARRITY SNYDER, LLP
11350 Random Hills Road
SUITE 600
FAIRFAX, VA 22030

EXAMINER

ABELSON, RONALD B

ART UNIT PAPER NUMBER

2616

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,077

Applicant(s)

WOO, HSIEN-CHUNG

Examiner

Ronald Abelson

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006 and 31 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,9,10 and 12-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 16-23 is/are allowed.
- 6) ☒ Claim(s) 1,6,7,9,10,12-15 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 2616

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US 6,700,868) in view of Parikh (US 4,551,836), and Okabe (US 6,031,838).

Regarding claim 1, Smith teaches a plurality of inputs configured to receive respective incoming streams of data packets (fig. 1 see inputs to boxes 12, 13, col. 3 lines 6-8).

Smith teaches a plurality of outputs configured to transmit respective outgoing streams of data packets (fig. 1 see outputs from boxes 12, 13).

Smith teaches packet forwarding logic configured to form outgoing streams of data packets from the data packets contained in the incoming streams (fig. 1 boxes 12, 13, actively process, col. 4 lines 47-49), using destination address information

Art Unit: 2616

contained in the data packets of the incoming streams (ATM, col. 1 lines 62-66). Note, in ATM data is forwarded based upon the destination address of the packet.

Smith teaches redundancy logic configured to transmit a first outgoing stream of data packets formed by the packet forwarding logic to a first output and a second output (fig. 1 boxes 21, 22, 12, 13, switching fabrics receive traffic from both tributary cards).

Smith a first service module (fig. 1 box 21) to process data packets contained in the first outgoing stream and a second service module (fig. 1 box 22) to process data packets contained in the first outgoing stream.

Smith teaches redundancy logic designates one of the first service module or the second service module to be primary and the other to be secondary (fig. 1 box 21, 22, redundant mode, one of STS switching fabrics designated working and other designated redundant, col. 3 lines 33-40) and causes the processed data packets to be discarded at the one of the first or second modules that is secondary (fig. 1 box 21, 22, redundant mode, although STS switching fabrics receive processed traffic from both tributary cards, they only select traffic from working tributary card, col. 3 lines 33-40).

Smith is silent on, in a redundant system, the first and second service modules maintain identical state information based upon state information.

Parikh teaches, in a redundant system, the first and second service modules maintain identical state information (col. 2 lines 37-39).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Smith by storing identical state information in the switching fabrics (Smith: fig. 1 boxes 21, 22). This modification can be performed in software. The suggestion for the modification is the standby processor can be selected if the active processor fails (Parikh: col. 2 lines 37-39). The examiner corresponds the active and standby processors in Parikh to the working and redundant switching fabrics of Smith (fig. 1 box 21, 22, col. 3 lines 33-36).

The combination is silent on the state information being obtained from the data packets contained in the first outgoing stream.

Okabe, like the combination, teaches an ATM environment (col. 3 lines 46-49). Furthermore, Okabe teaches the state / control information being obtained from the incoming data

Art Unit: 2616

packets (adding, onto cell header, active/standby identification, col. 4 lines 8-11).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Smith and Parikh by transmitting state information / (active standby) in the packet header. This modification can be performed in software. This modification would benefit the by providing a method for tributary cards to inform the service modules (Smith: fig 1 boxes 12, 13, 21, 21) which tributary card is active and which is standby.

Regarding claim 6, the combination teaches the first service module is initially designated to be primary (Smith: col. 3 lines 31-40).

Regarding claim 7, the combination teaches upon receiving an indication that the first service module has failed and an indication that the second service module is operational, the redundancy logic designates the second service module to be primary and the first service module to be secondary. (col. 5 lines 31-36). Note, regarding the second service module is determined to be operational, both tributary cards are capable of detecting failure on itself.

Art Unit: 2616

3. Claims 10, 12-15, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Parikh, Okabe, and Alexander (US 6,956,816).

Regarding claims 10 and 15, Smith teaches forming a first data stream from received data packets (fig. 1 see input 60).

Smith teaches transmitting the first data stream to both a first service module and a second service module (fig. 1 see inputs to boxes 12, 13, col. 3 lines 6-8).

Smith teaches discarding, at the second service module, packets processed by the second service module and discarding, at the first service module, packets processed by the first service module (fig. 1 boxes 21, 22, switching fabrics receive processed traffic, only select traffic from the working tributary card, col. 3 lines 31-40). Note, by receiving the packets, the switching fabrics are processing the packets.

Regarding claim 15, in addition to the limitations previously addressed, Smith teaches packet forwarding logic uses destination address information within the packets to form the stream (ATM, col. 1 lines 62-66). Note, in ATM data is forwarded based upon the destination address of the packet.

Art Unit: 2616

Smith is silent on, in a redundant system, identical state information is maintained in each of the first and second service modules based upon state information obtained from the transmitted first data streams.

Parikh teaches, in a redundant system, the first and second service modules maintain identical state information based upon state information (col. 2 lines 37-39).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Smith by storing identical state information in the tributary cards (Smith: fig. 1 boxes 12, 13). This modification can be performed in software. The suggestion for the modification is the standby processor can be selected if the active processor fails (Parikh: col. 2 lines 37-39).

The combination is silent on the state information being obtained from the data packets contained in the first outgoing stream.

Okabe, like the combination, teaches an ATM environment (col. 3 lines 46-49). Furthermore, Okabe teaches the state / control information being obtained from the incoming data packets (adding, onto cell header, active/standby

Art Unit: 2616

identification, col. 4 lines 8-11).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Smith and Parikh by transmitting state information / (active standby) in the packet header. This modification can be performed in software. This modification would benefit the by providing a method for tributary cards to inform the service modules (Smith: fig 1 boxes 12, 13, 21, 21) which tributary card is active and which is standby.

Although the combination teaches discarding packets at the first and second service modules, the combination is silent on receiving an indication of whether the first service module has failed.

Alexander teaches receiving an indication of whether the first service module has failed (heartbeat messages, col. 4 lines 54-58).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by having the working switch fabric send heartbeat messages to the redundant switch fabric (Smith: fig. 1 boxes 21, 22), as suggested by Alexander. This modification can be performed in software. This modification would benefit the system by

Art Unit: 2616

informing the redundant switching module if it is being changed to the working switching fabric and will begin to transfer the incoming data packets or if it is to remain as the redundant switching module and continue to discard the incoming data packets.

Regarding claims 12 and 26, initially designating the first service module to be active, and designating the second service module to be active if the indication indicates that the first service module has failed and the second service module is determined to be operational (col. 5 lines 30-36). Note, regarding the second service module is determined to be operational, both tributary cards are capable of detecting failure on itself.

Regarding claim 13, the combination teaches if the indication indicates that the first service module has not failed, forming outgoing streams from at least data packets processed by the first service module. See rejection for claim 15 above.

Art Unit: 2616

Regarding claim 14, the combination teaches if the indication indicates that the first service module has failed, forming outgoing streams from at least data packets processed by the second service module. See rejection for claim 15 above.

Regarding claim 24, the data packets comprise historical state information (Parikh: col. 2 lines 37-39).

Regarding claim 25, the received packets comprise at least one of the data packets or control packets (Smith: data, col. 1 lines 13-16).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination as applied to claim 1 above, and further in view of Xu (US 6,765,907).

The combination is silent on multicast logic for duplicating specified data packets for output to the plurality of outputs.

Xu teaches multicast logic for duplicating specified data packets for output to the plurality of outputs (col. 1 lines 43-45).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of combination by outputting duplicate copies of the data packets. This modification can be performed in software according to the teachings of Xu. This modification would benefit the system by facilitating redundancy.

Response to Arguments

5. Regarding independent claim 1, applicant's arguments filed 7/31/2006 have been fully considered but they are not persuasive. The applicant asserts that Smith does not teach discarding at the one of the first or second service modules that which is secondary (pg. 10 last paragraph, pg. 11 1st paragraph). However this is clearly detailed in Smith as shown above (fig. 1 box 21, 22, redundant mode, although STS switching fabrics receive processed traffic from both tributary cards, they only select traffic from working tributary card, col. 3 lines 33-40).

6. Applicant's arguments, see pages 12-14, filed 7/31/2006, with respect to the rejection(s) of amended independent claim(s)

Art Unit: 2616

10 and 15 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of the combination of Smith, Parikh, Okabe, and Alexander.

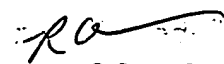
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ronald Abelson
Examiner
Art Unit 2616
